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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/821,168	03/29/2001	Stefan Pleisch	CH20000077	4016

7590 04/28/2005

IBM CORPORATION
INTELLECTUAL PROPERTY LAW DEPT.
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EXAMINER

ZHONG, CHAD

ART UNIT	PAPER NUMBER
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2152

DATE MAILED: 04/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/821,168	PLEISCH ET AL.	
	Examiner	Art Unit	
	Chad Zhong	2152	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

47

DETAILED ACTION

1. This action is responsive to communications: Amendment, filed on 10/27/2004.

Claims 1-12 are presented for examination.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Rothermel et al. (hereinafter Rothermel) "A Fault-Tolerant Protocol for Providing the Exactly-Once Property of Mobile Agents".

4. As per claim 1, Rothermel teaches a method of operating a mobile agent (Fig 2, item S1, S2, wherein the S1 and S2 are mobile agent stages) that travels through a network of a number of computers, wherein the mobile agent is executed in a sequence of stages (Fig 2) and wherein each stage comprises a set of places (each node is fully capable receiving multiple incoming processes, see for example, Fig 2, Fig 3 there are plurality of processes/put going from stage 1 to stage 2), the method comprising the following steps:

executing the mobile agent in at least one of the set of places of a respective one of the stages (Fig 1, execute),

evaluating (abort is not triggered, and put is performed) in which place (Fig 2, nodes 1 through 5) of the respective stage the mobile agent has been executed successfully (Fig 3,

Art Unit: 2152

wherein a successful execution entails going from S_i to S_{i+1}),

agreeing on this place (priority of worker node) among the set of places (pg 3, Col. 1, lines 1-25; Col. 2, lines 25-32),

aborting and/or undoing any operation in connection with the mobile agent in any other place of the respective stage (pg 2, 3rd paragraph; pg 3, Col. 2, lines 25-32), and

moving a modified mobile agent resulting from the successful execution to the next stage (Fig 3, the agent is moved to next stage S_{i+1}).

5. As per claim 2, Rothermel teaches the method of claim 1 wherein the steps are repeated for any one of the sequence of stages (see for example, Fig 3; pg 3, Col. 2, lines 40-45).

6. As per claim 3, Rothermel teaches the method of claim 1 wherein the mobile agent is executed sequentially in the set of places of the respective stage (Fig 3, going from stage S_i to S_{i+1}), and wherein the mobile agent is not executed anymore in subsequent places after successful execution in one of the set of places and agreement on this successful execution (pg 3, Col. 2, lines 25-33).

6. As per claim 4, Rothermel teaches The method of claim 1 wherein a decision is generated in each stage including at least one of a primary place that corresponds to the place in which the mobile agent has executed successfully (pg 3, Col. 1, lines 1-15; Fig 2).

7. As per claim 5, Rothermel teaches the method of claim 4 wherein at least one of the primary place and/or the set of places of the next stage and/or the resulting modified mobile agent is confirmed to at least all other places of the respective stage except the primary place (Fig 2, wherein each item in stage S_2 are capable of executing the process, but only one item is committed at a time to the process).

8. As per claim 6, Rothermel teaches the method of claim 4 wherein at least one of the primary place and/or the set of places of the next stage and/or the resulting modified mobile agent is moved to all places of the next stage (Fig 2).

9. As per claim 7, Rothermel teaches the method of claim 6 wherein the move is performed as a reliable forward function (pg 3, Col. 1, lines 1-15, wherein if there is a failure, another agent will take over, thus providing reliability).

10. As per claim 8, Rothermel teaches the method of claim 1 wherein the steps are managed by a fault-tolerance enabler (FTE) (pg 3, lines 45-53, wherein orchestrator plays fault tolerance role as it will decide on which item in the stage gets to execute the process through a voting process) which is independent of the mobile agent (Fig 4).

11. As per claim 9, Rothermel teaches the method of claim 8 wherein the FTE travels with the mobile agent to the set of places of the respective stage (pg 3, lines 45-53, wherein orchestrator plays fault tolerance role as it will decide on which item in the stage gets to execute the process through a voting process, furthermore, each stage will require a voting process to determine the committing node).

12. As per claim 10, Claim 10 is rejected for the same reasons as rejection to claim 1 above.

13. As per claim 11, Rothermel teaches computer program product according to claim 10, wherein the program code means is stored on a computer-readable medium (Fig 3, wherein stages has the ability to store software programs inherently).

14. As per claim 12, Claim 12 is rejected for the same reasons as rejection to claim 1 above.

Art Unit: 2152

Conclusion

Applicant's arguments with respect to claim 1-12 have been considered and found persuasive.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents and publications are cited to further show the state of the art with respect to "a FAULT-TOLERANT MOBILE AGENT FOR A COMPUTER NETWORK".

- i. US 5,924,094 Sutter

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chad Zhong whose telephone number is (571)272-3946. The examiner can normally be reached on M-F 7:15 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BURGESS, GLENTON B can be reached on (571)272-3949. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CZ
April 6, 2005

 JOHN FOLLANSBEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100